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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------------|------------------|
| 09/837,165   | 04/19/2001  | Keiki Yamada         | 0054-0230P                      | 8432             |
| 2292 7590 01/25/2007<br>BIRCH STEWART KOLASCH & BIRCH<br>PO BOX 747<br>FALLS CHURCH, VA 22040-0747 |             |                      | EXAMINER<br>HUNTSINGER, PETER K |                  |
|  |             |                      | ART UNIT<br>2625                | PAPER NUMBER     |

| SHORTENED STATUTORY PERIOD OF RESPONSE | NOTIFICATION DATE | DELIVERY MODE |
|--|-------------------|---------------|
| 3 MONTHS                               | 01/25/2007        | ELECTRONIC    |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/25/2007.

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mailroom@bskb.com

|                              |  |                                      |  |
|------------------------------|--|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/837,165   | <b>Applicant(s)</b><br>YAMADA ET AL. |  |
|                              | <b>Examiner</b><br>Peter K. Huntsinger | <b>Art Unit</b><br>2625              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5 and 8-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicant's arguments, see the appeal brief, filed 9/27/06, with respect to the rejection(s) of claim(s) 1 under Kawabe et al. Patent 6,034,710 and Furuya et al. Patent 5,418,097 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kawabe et al. Patent 6,034,710 and Kamimura Patent 6,266,077.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabe et al. U.S. Patent 6,034,710 and Kamimura Patent 6,266,077.

Referring to claim 1, Kawabe et al. discloses an optical printing apparatus in which an image data indicative of a density of each of a plurality of pixels forming an image with a first gradation value is input (col. 9, lines 53-65), so that a plurality of exposure elements of a print head (recording elements, col. 2, lines 36-39) are each driven to perform an exposure with a required quantity of exposure light, thereby forming a pixel corresponding to each of said exposure elements on a photosensitive printing medium which generates a color of a density corresponding to said required

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quantity of exposure light (col. 9, lines 4-16), said apparatus comprising: an exposure level conversion section (printing head control section 40) for converting said image data into corresponding exposure level data (col. 9, lines 53-65) indicative of a density of each pixel with a second gradation value greater than said first gradation value indicated by said image data (col. 7, lines 9-20), said conversion of said image data being based upon predetermined data correlating the image data to exposure level data stored in a conversion table (Table 1, col. 13, lines 13-40), and for outputting the exposure level data thus converted (col. 11, lines 42-54); an exposure level correction section that corrects the exposure level data output from said exposure level conversion section using a correction factor for each element of said print head (col. 11, lines 43-54), the correction factor being based upon data stored in a correction table that correlates the exposure level for each element of said print head with an optimal exposure level, and outputting corrected exposure level data (col. 4, lines 20-30); and a head driving section (printing head 30) being connected to receive said corrected exposure level data from said exposure level correction section and driving, based on said corrected exposure level data, each element of said print head to expose said photosensitive printing medium in such a manner that a quantity of light corresponding to said corrected exposure level data is exposed to said photosensitive printing medium, thereby forming a pixel of a density corresponding to said corrected exposure level data on said photosensitive printing medium (col. 11-12, lines 55-67, 1-29). Kawabe et al. do not disclose correcting the exposure level data based upon predetermined data.

Kamimura disclose an exposure level correction section that corrects the exposure level

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data based upon predetermined data (col. 4, lines 21-43). Kawabe et al. and Kamimura are combinable because they are from the same field of correcting exposure levels in printing systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to correct exposure level based upon predetermined data. The motivation for doing so would have been to correct the exposure levels during the printer's manufacture as opposed to every time a document is printed, which would require more equipment within the printer and lengthen the time required for printing. Therefore, it would have been obvious to combine Kamimura with Kawabe et al. to obtain the invention as specified in claim 1.

Referring to claim 2, Kawabe et al. discloses the optical printing apparatus as claimed in claim 1, wherein said photosensitive printing medium has a nonlinear chromophore density characteristic in which the density of a color generated in accordance with a quantity of exposure light is nonlinear with respect to the quantity of exposure light (See Fig. 8-10 showing density vs. exposure), and said exposure level conversion section converts said image data into said exposure level data in such a manner that the density of a pixel formed on said photosensitive printing medium corresponding to said exposure level data is linear with respect to the image data corresponding to said exposure level data (col. 14, lines 50-67).

Referring to claim 3, Kawabe et al. discloses the optical printing apparatus as claimed in claim 1, wherein upon exposure of each element of said print head, the quantity of light per unit time of each element is constant, and said head driving section drives each element of said print head in such a manner that the exposure time of each

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element is proportional to the magnitude of said exposure level data (col. 2, lines 24-35).

Referring to claim 5, Kawabe et al. discloses the optical printing apparatus as claimed in claim 1, wherein said image data indicates the density of each of three primary colors for a plurality of pixels forming a color image with said first gradation value for each pixel (col. 9, lines 9-16), and said exposure level conversion section converts said image data input thereto into corresponding exposure level data for each color which is indicative of the density of each color of each pixel represented by said image data with a second gradation value greater than said first gradation value for each color (col. 9, lines 43-46), and said head driving section receives said exposure level data for each color and drives each element of said print head to expose said photosensitive printing medium in such a manner that a quantity of light corresponding to said exposure level data is exposed to said photosensitive printing medium, thereby forming a pixel of a density for each color corresponding to said exposure level data for each color on said photosensitive printing medium (col. 9, lines 46-49).

Referring to claim 8, Kawabe et al. discloses the optical printing apparatus as claimed in claim 1, wherein said exposure level correction section comprises: a multiplier (multiplier 41 of Fig. 3) for multiplying said correction factors and exposure level data (col. 11, lines 42-45); wherein said exposure level correction section determines corrected exposure level data from a correction factor read out from said correction table and an input exposure level data, and outputs the corrected exposure level data thus determined (col. 11, lines 43-54)

Referring to claim 9, Kawabe et al. discloses the optical printing apparatus as claimed in claim 1, further comprising: an accumulated exposure time information storing section (correction memory 66) for storing accumulated exposure time information corresponding to an accumulated exposure time of said print head (col. 14, lines 50-67); and an exposure level correcting section for correcting exposure level data output from said exposure level conversion section in accordance with accumulated exposure time information output from said accumulated exposure time information storing section, and for outputting the thus corrected exposure level data (col. 15, lines 1-3); wherein said head driving section receives said corrected exposure level and drives each element of said print head to expose said photosensitive printing medium in such a manner that a quantity of light corresponding to said input corrected exposure level is exposed to said photosensitive printing medium, thereby forming a pixel of a density corresponding to said corrected exposure level data on said photosensitive printing medium (col. 15, lines 1-3).

Referring to claim 10, Kawabe et al. discloses the optical apparatus as claimed in claim 1, wherein said image data is converted into said exposure level data in accordance with characteristics of said print head and said photosensitive printing medium (col. 30, lines 31-39).

Referring to claim 11, Kawabe et al. discloses the optical apparatus as claimed in claim 1, wherein said correction factor includes converting said unevenness in density resulting from said print head (col. 4, lines 13-18).

### ***Conclusion***

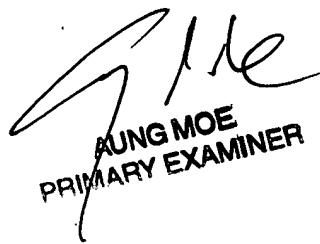
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter K. Huntsinger whose telephone number is (571)272-7435. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Moe Aung can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PKH



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PRIMARY EXAMINER